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(54) Title: POLYOLEFIN PRODUCTION



(57) **Abstract:** Provided is a catalyst component for producing a polyolefin, which catalyst component comprises a metallocene catalyst having a structure according to a formula (I): wherein Cp^1 and Cp^2 are each independently a cyclopentadienyl derivative which may be substituted or unsubstituted and are selected from cyclopentadienyl groups, indenyl groups and fluorenyl groups, provided that at least one of the cyclopentadienyl derivatives comprises an N atom or a P atom in its cyclopentadienyl ring; R^{M} is a structural bridge to impart stereorigidity between Cp^1 and Cp^2 ; and when only one of Cp^1 and Cp^2 comprises a P atom in its cyclopentadienyl ring, R^{M} is attached to that phosphorous atom, or is attached to a carbon atom in the cyclopentadienyl ring distal to that phosphorous atom; and when one of Cp^1 or Cp^2 comprises an indenyl group and the other of Cp^1 and Cp^2 comprises an indolyl group, R^{M} is attached either directly to the N atom of the indolyl group or to a carbon atom that is vicinal to the N atom; M is a metal from Group IIIB, IVB, VB or VIB; Q is a hydrocarbyl group having from 1-20 carbon atoms, or a halogen; and p is the valence of M minus 2.